Maggie Montalto, Tori Buckley, Remi Leibovic

Comparative Textual Media

In *Comparative Textual Media* Katherine Hayles and Jessica Pressman describe the comparative textual media approach as a program for the humanities which allows for conversations between various types of media. It "pursues media as objects of study and methods of study" (Hayles and Pressman x). This approach demonstrates how crucial it is to understand the past in order to study the present and future. They state textual media "provide primary access to the thoughts, beliefs discoveries, arguments, developments, and events that preceded us" (Hayles and Pressman ix). By studying textual media we can learn valuable information about how technology has changed and why certain digital artifacts have been constructed in the ways that they have. The comparative textual media approach also reveals the relationship between users and technology and how that relationship operates in both directions. Users are not always "in charge," and digital technology often shapes what we can and cannot do. A relationship of this nature can be seen between the 1960's toy the Think-a-tron and Arthur Mee's *The Book of Knowledge: The Children's Encyclopedia*.

The Book of Knowledge: The Children's Encyclopedia by English writer and editor Arthur Mee was the first modern children's encyclopedia. It was released in Great Britain in 1910 and in the United States in 1912. It continued to be updated and printed until 1964. Each set of encyclopedias contains ten books which focus on school-taught subjects and include definitions, articles, educational maps, and vibrant photographs (Preece). Hasbro's 1960s toy the Think-a-tron can be considered a remediation of this book. The toy was marketed as an educational game in which children insert punch cards into a computer like machine. Each punch card is double sided and has a multiple choice or true or false question printed on in. Once inserted, the Think-a-tron "reads" the card and displays the answer in lights. How does the comparative textual media approach help us to understand the relationship between the Think-a-tron and the children's encyclopedia it was based on?

Research Method

When we began this project we realized we had to understand the Think-a-tron both mechanically and intellectually. Our first step was to interact with the toy to see how it works. To our dismay, we discovered our Think-a-tron is broken. Our first goal became to repair it. We started simple and replaced the pair of D batteries used to power the toy. When this didn't work, we tried replacing the light bulb. Still the Think-a-tron was unresponsive. From this point on we knew repairing this toy would be more complex than we anticipated.

Figure 1 Hasbro's 1960's toy the Think-a-tron (toytales.ca)

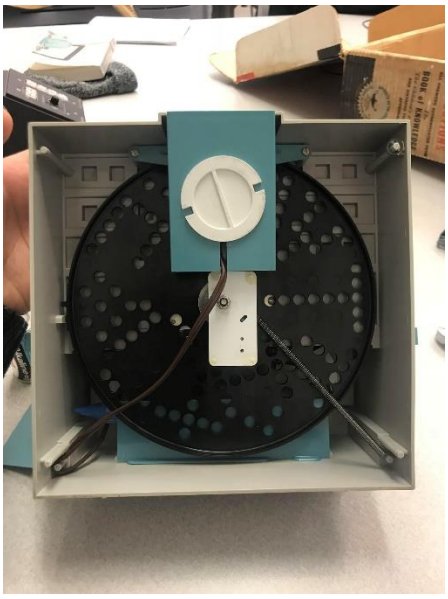

Figure 2 The exposed inner workings of the Think-a-tron.

Our next step was to dismantle the Think-a-tron completely and separate the pieces. We found screws, springs, and washers which each have some significance and meaningful contribution in helping it function. We took the toy apart and put it back together multiple times still unable to determine why it wasn't working. We were able to find a YouTube video of a functioning Think-a-tron so we knew what should happen when we insert a card but ours still wasn't doing it. At this point, we were a few weeks into our research and still had no answers. We soon realized we needed to shift our focus and change our goals. While breaking down the Think-A-Tron was an important part of this project, it wasn't the only thing that we needed to do research on. Why was this toy designed the way it was and for what purpose? Our group took a step back and looked at it from the beginning; the packaging.

Remediation

On the Think-a-tron's packaging are the words "The machine that thinks like a man", "It Thinks! It Remembers! It Answers!", "Amazing, Fascinating, Educational." These are all very impressive but why was the toy marketed using these terms? We realized this was the question we really needed to answer in order to understand the Think-a-tron. We also noticed the statement "All questions and answers compiled and authenticated from *The Book of Knowledge: Children's Encyclopedia.*" We spent most of our time worrying and focusing on the actual toy and we completely overlooked the punch card questions that are fed into the machine to be answered. We looked over each of the cards and every single card has written on it "Authenticated from *The Book of Knowledge*". Clearly, it is important to the Hasbro creators that the consumers of this product know that this toy was built upon questions that came from this book.

Though the packaging does not state the edition of the encyclopedia used to make these questions, the edition released most nearly to the toy was released in 1952. We were able to acquire the first book from the 1965 series of encyclopedias, the volume for the letter 'A,' and this would later become a valuable source for our research. It became clear to us that the Think-a-tron is a remediation of this book. In *Remediation: Understanding New Media* authors Jay David Bolter and Richard Grusin define remediation as reform and state "The goal of remediation is to refashion or rehabilitate other media" (Bolter and Grusin 56). In a sense, the Think-a-tron is *The Book of Knowledge* in a new, more interactive form. It takes reading which is usually an individual experience and transforms it into a group activity.

The idea of remediation is an essential part of our research because media is constantly changing. While *The Book of Knowledge* and the Think-a-tron contain much of the same information, the experience a child has from one medium to the other is quite

different. Encyclopedias are reference materials. A child would go to it when they had a question about a particular topic, get their answer, and put the book away. On the contrary the Think-a-tron was meant to encourage children to think about the questions on the cards and attempt to “beat” the machine. By playing with this toy they would learn about a variety of topics at once.

Computers: A New Medium

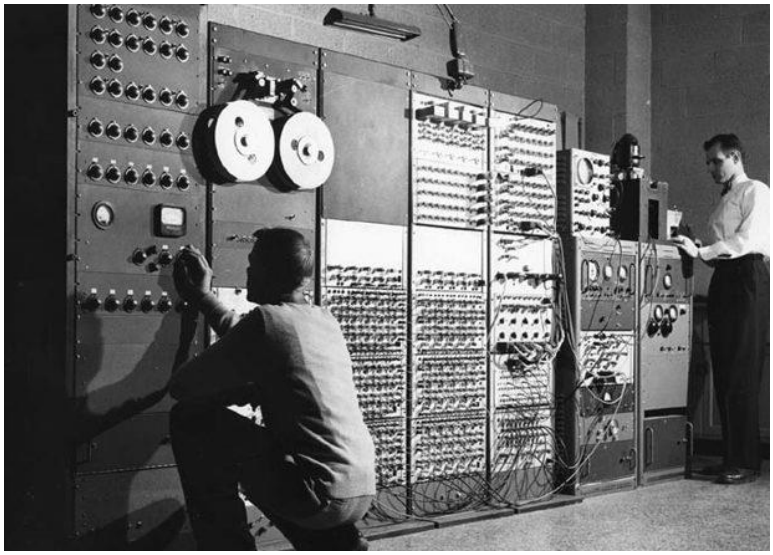

Figure 3 1960s mainframe computer (rampages.us)

Another intriguing aspect of the Think-a-tron’s packaging is the slogan “The machine that thinks like a man.” This encouraged us to examine the toy’s appearance and think about how the creator’s may have used this slogan as a marketing technique. According to an online archive called Toy Tales, the Think-a-tron “was one of the first educational computer-based toys marketed to children” (toytales.ca). Computers were still relatively new and unfamiliar to the general public so the computer-like appearance of this toy was meant to intrigue children. During the 1960s, computers were not household objects. As seen in figure 3, the mainframe computer, which the Think-a-tron is modeled after, was a very large machine used for professional purposes. Another component which contributes to the computer-like appearance of the Think-a-tron are the 150 double-sided punch cards which are included with the toy and display either a multiple choice or true or false question. Real computers of this era were also operated using punch cards (toytales.ca). When the card is inserted into the Think-a-tron it “reads” it and then displays the correct answer in lights. The toy was meant to be used as a type of trivia game. The toy dials on the front were meant to keep score so children could test their knowledge and challenge their friends.

Our next step was to figure out how the Think-a-tron “reads” the double sided punch cards. On each card, there is either a multiple choice or true or false question. It became abundantly clear to us that the holes in the cards are the key to revealing the answer. Using *The Book of Knowledge* we obtained from the library and Google we started to decipher each card’s answer and compared it to the holes in the middle of the card and the notches punched on the side to see if there are any direct relationships between the two. After sifting through about 50 cards and separating each card with its respective answer, we came to the conclusion that the notches do in fact represent the answer to the question on the card.

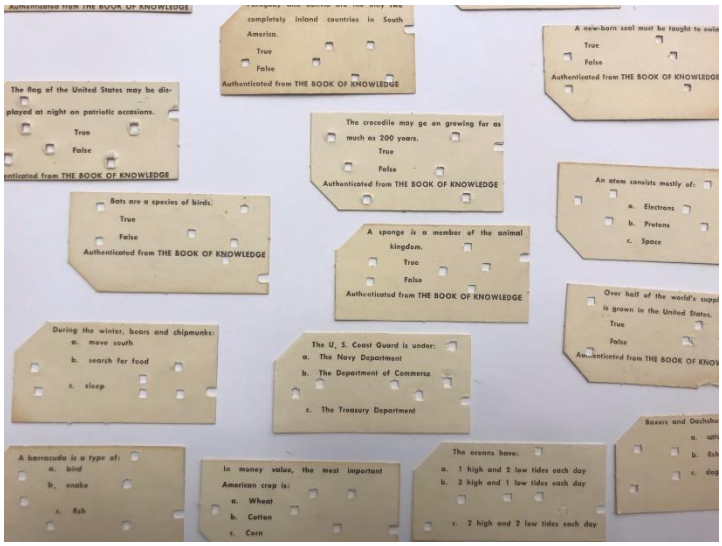

Figure 4 The holes in the middle of the card have no practical purpose.

Notice in figure four the holes punched on the inner parts of the card. We struggled especially with these, as there is absolutely no pattern on where they fall. Some of the holes did match up with other cards, but still, there was no clear evidence that these holes have any meaning. Also note that each card has notches along the right side. After some consideration, we realized that there is no way that these notches were placed just for decoration on the card, and that they have some greater significance. The figure shows that the cards with notches in the middle indicate an answer of “A”, the cards with notches at the top indicate a “B” answer, and the notches at the bottom of the card indicate an answer of “C”. But what happens when the cards are flipped over? Will the answers and notches correspondents remain the same? We found that after flipping the stacks of cards that we separated, two of the three stacks had true or false questions on the reverse side, while the third stack’s reverse side had more questions.

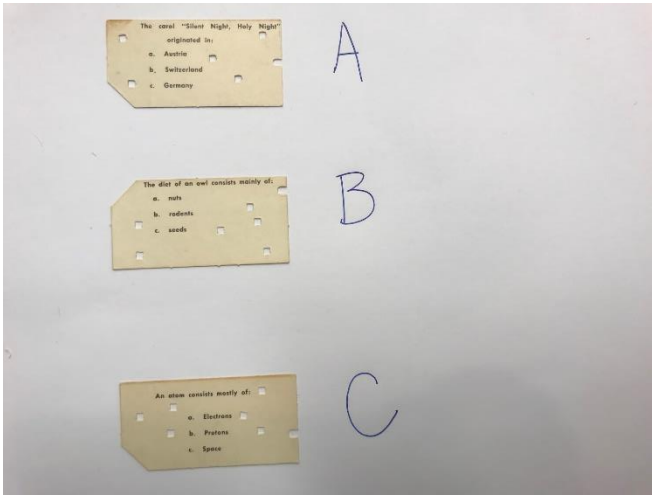

Figure 5 The A, B, and C answers.

These figures show the various notches which indicate the answer to each question. The “A” notch is the same for both sides of the card, however the “B” notches moved from the very top right, to the very bottom right, and also became and answer of “false” for the true or false questions. The “C” notches moved from the lower edge of the card to the upper-mid right side of the card, and became the “true” to the true or false questions. Once we figured out what the placement of the notches meant for each side of the card, we went back to examining the holes punched in the inner parts of the cards. After close consideration of both the Think-A-Tron’s

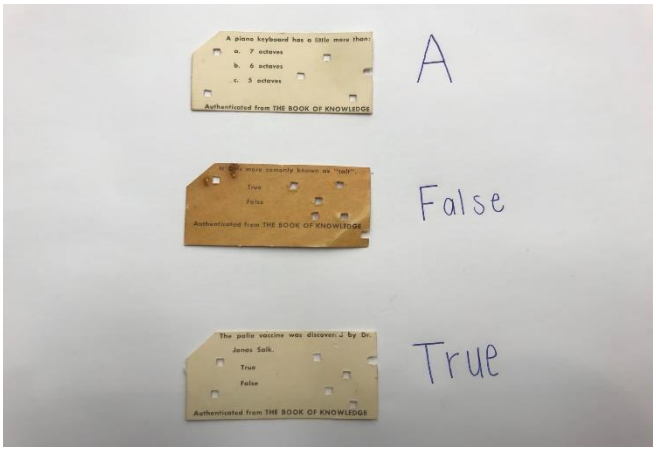

Figure 6 The A, False, and True answers.

mechanics and the answers of each question, we came to the conclusion that the holes punched on the inner part of the card, and anywhere else on the card besides the edge, are indeed just pure decoration to replicate an authentic 1950s/1960s computer punch card.

Result

Ultimately, what we discovered is that the Think-a-tron itself is not necessary to play the trivia game. A child in the 1960s could have very easily determined the meaning of each hole and notch on the punch cards using the same methods we did. What does this mean for the relationship between the Think-a-tron and *The Book of Knowledge?* To answer this question, we turned to Patricia Crain's essay "Reading Childishly? A Codicology of the Modern Self" in which she explores the history of the relationship between child and book.

Intertwining of Media

In the nineteenth century, it was widely accepted that reading a book was associated with intelligence and education. Children who read were considered to be focusing on bettering themselves and becoming productive members of society. On the contrary, "the parting of a book and heart leads more or less inevitably, if hyperbolically, to the gallows" (Crain 156). According to this argument, if the book is where a child stores their sense of self, by not interacting with books a child is not cultivating a self. Crain then goes on to discuss nineteenth century book production and how the process of book-making at this time contributed to the relationship between book and child. She describes a version of Jack and the Beanstalk which "trades in its magic for the technology of books, providing in place the fabulous abundance of the golden eggs, lessons in capitalistic exchange and the division of labor" (Crain 157). The world Jack travels to shows children producing books, "Children's hearts became bound to books, as industrial producers as well as consumers in the print marketplace" (Crain 158). At this historical moment children and books became linked. The "thingness" of a book is emphasized and the content becomes less important. This suggests that we aren't as concerned with the content of a book when talking about this notion of self as we are that it is a book, an engagement with a textual object in this way.

Textual Object

The cultural linking of children and books Crain describes can also be applied to toys on the basis that the Think-a-tron is a textual object. Like a book, it requires the child be

literate in order to interact with it as intended by its creators. However, the creators added an interesting element by designing the toy to look like a mainframe computer. This is an attempt by Hasbro to link an emerging technology to the technology of a book in order to make the toy an educational one. They do this by making the most important part of the toy contain text. Without the punch cards, we're left with a piece of plastic that essentially does not do anything. While the toy seems to be very future focused, there is a very clear juxtaposition between the old and the new. This can most obviously be seen in the typeface on the cards. The creators used Futura which is a sans-serif typeface completed by Paul Renner in 1927. It is very simple and geometric and is still widely used today (Lupton 15). The typeface used in *The Book of Knowledge* is a much more elaborate font which includes serifs, small decorative lines used as embellishment (Lupton 23). This style of typeface is associated with traditional printing presses. The choice to use Futura on the punch cards shows how text has changed over time and shows old technology blending with the new.

Another aspect of toys which shows how they are related to books is seen in how children aid in deciding what kinds of toys are created and at what point in time. The goal of toy companies is to produce products children will be interested in so that they will sell. More directly related to Crain's essay, there are entire markets which emerge around children's books and therefore books and play go hand in hand. Books are remediated and transformed so that children can experience the content of books in a variety of different ways. In terms of the 1960's Think-a-tron, the toy is a remediation of a book and calls for a specific type of interaction which *The Book of Knowledge* does not. In interacting with a book the child is free to use it however they want but in terms of the Think-a-tron if the cards aren't inserted properly it won't work. Based on the Think-a-tron's relatively high price for the time period and the nature of the object is plausible that the creation and the computer-like appearance of this of this toy were attempts to persuade children to engage with what, at the time, was considered an educational book. The think-a-tron was made with children in mind to make this book more interesting.

Property

The idea of ownership and personal property also contributes to Crain's argument and the relationship between book and child. Books were one of the first consumer objects marketed towards children. Crain states, "The book represented one of children's first encounters with private property, as such—as a vocabulary word, as a thing, as a concept, as a practice" (Crain 160). Books transitioned from being commodities to gifts or private property. Children began to receive books as gifts long before they could even read. After bringing up this point Crain discusses how children find different uses for books such as storing drawings and notes in them which make them even more personal and unique. In a sense, children make books into toys. How a child chooses to interact with a book, what books they receive and cherish, and their relationship to those particular books contribute to how they develop their sense of self.

In a similar way, children also find other uses for toys and alter them to fit their needs. Robin Bernstein discusses this in her essay "Toys are Good for Us: Why We Should

Embrace the Historical Integration of Children's Literature, Material Culture, and Play". She states, "Children receive mass-produced material culture, but they adapt it: they chop hair off dolls, apply stickers to toy trucks, endow plastic blocks with names and personalities" (Bernstein 460). With this idea in mind, it's interesting to consider that toys come with instructions for play as well as words plastered on their packaging. If a child is unable to read they'll still interact with a toy anyway they can, often not using it for its intended purpose. The Think-a-tron was clearly created with older children of reading age in mind but if that child had younger siblings who were intrigued by the toy's computer-like appearance they would probably attempt to interact with it in some way.

Conclusion

Through our research, we have been able to discover how toys and books are intertwined. Many toys today are based off of books and vice versa. The relationship works in both directions and the two markets benefit from one another. Even when a toy is completely original it still includes textual components such as directions for play or instructions for assembly. In terms of the Think-a-tron, the creators used a book, a stable piece of history, to give the Think-a-tron merit and make it marketable as an educational toy. This shows how the Think-a-tron is both book and toy and is interacted with in many of the same ways as a book. By taking the toy apart and decoding the cards we have participated in the creative manipulation Crain and Bernstein discuss.

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